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| APPLICATION NO.                  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/586,551                       | 01/22/2007  | Hiroshi Kawano       | 5259-000068/US/NP   | 9949             |
| 27572                            | 7590        | 10/31/2008           |                     |                  |
| HARNESS, DICKEY & PIERCE, P.L.C. |             |                      | EXAMINER            |                  |
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|                                  |             | ART UNIT             | PAPER NUMBER        |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/586,551

**Applicant(s)**

KAWANO ET AL.

**Examiner**

Thomas M. Dougherty

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 September 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2 and 4-33 is/are pending in the application.  
4a) Of the above claim(s) 2 and 7-33 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 and 4-6 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SI-108)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

Applicants' arguments filed 9/26/08 have been fully considered but they are not persuasive. On page 18 of the REMARKS the applicants note that "the pitch-direction flexural oscillation and the roll-direction flexural oscillation are excited in the directions of the arrows as shown in FIG. 1 described below". However in that figure there is one arrow, it is in a longitudinal direction. There are no arrows showing how either flexural or roll-driven flexural oscillations are excited. The Applicants' discussion then proceeds to note that "the ultrasonic motor disclosed in Myoga thus generates the longitudinal oscillation and the torsional oscillation in the directions of the arrows shown in FIG. 2 described below". There are not such arrows shown in either the figure 2 of the Applicants or of Myoga. The REMARKS are not understood in this regard. The Applicants then discuss the Ohnishi reference and not that "Ohnishi also generates the longitudinal oscillation and the torsional oscillation in the direction of the arrows shown in FIG. 2 described below". Like Myoga, Ohnishi does not show any arrows in his figure 2. As the Applicants also do not show any arrows in their figure 2, the context of the argument is not understandable. Consequently, the REMARKS are not persuasive.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. These claims all directly depend or ultimately depend on canceled claim 3. As such, a reconsideration of their relationship to the prior art cannot be made.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizobe (JP 05-337839) in view of Myoga et al. (JP 4-4766). Mizobe shows (e.g. fig. 3) a screw driving device for performing a tightening operation and a loosening operation on a screw with respect to a screw hole that is correspondingly formed in a member to be fastened, comprising: a device body in which are provided piezoelectric element (*sic*) that generates predetermined ultrasonic oscillations (see CONSTITUTION) upon being impressed with a predetermined alternating current (22), and an oscillating end surface (17) on which mechanical oscillations are excited based on the ultrasonic oscillations; and an oscillation transmission means that is integrally fixed to the device body on the oscillating end surface(1) and that transmits the mechanical oscillations to the screw by contact with the screw.

Given the invention of Mizobe as noted above, it is not clear that the piezoelectric element comprises two types of piezoelectric element groups when the rotation axis in the rotation direction of a screw is set as a z-axis in an xyz orthogonal coordinate

system, namely, pitch-direction flexural oscillation piezoelectric elements that excite pitch-direction flexural oscillation having a y-axis as a pitch axis, and roll-direction flexural oscillation piezoelectric elements that excite roll-direction flexural oscillation having an x-axis, which is perpendicular to the pitch axis, as a roll axis.

Myoga et al. show (fig. 1) a piezoelectric element which comprises two types of piezoelectric element groups when the rotation axis in the rotation direction of a screw is set as a z-axis in an xyz orthogonal coordinate system, namely, pitch-direction flexural oscillation piezoelectric elements that excite pitch-direction flexural oscillation having a y-axis as a pitch axis, and roll-direction flexural oscillation piezoelectric elements that excite roll-direction flexural oscillation having an x-axis, which is perpendicular to the pitch axis, as a roll axis. Note that, like the applicants, Myoga et al. teach a longitudinal (pitch) and torsional (roll) oscillation.

Myoga et al. do not note the specific use of their invention.

It would have been obvious to one having ordinary skill in the art to employ the invention of Myoga et al. with the screw driver of Mizobe et al. at the time of their invention, *mutatis mutandis*, since their design makes "the efficiency and torque of a wave motor higher" as they note in their PURPOSE.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizobe (JP 05-337839) in view of Ohnishi et al. (US 4,965,482). Given the invention of Mizobe as noted above, it is not clear that the piezoelectric element comprises two types of piezoelectric element groups when the rotation axis in the rotation direction of a screw is set as a z-axis in an xyz orthogonal coordinate system, namely, pitch-direction flexural

oscillation piezoelectric elements that excite pitch-direction flexural oscillation having a y-axis as a pitch axis, and roll-direction flexural oscillation piezoelectric elements that excite roll-direction flexural oscillation having an x-axis, which is perpendicular to the pitch axis, as a roll axis.

Ohnishi et al. show (e.g. figs. 1, 11, 13) a piezoelectric element which comprises two types of piezoelectric element groups when the rotation axis in the rotation direction of a screw is set as a z-axis in an xyz orthogonal coordinate system, namely, pitch-direction flexural oscillation piezoelectric elements that excite pitch-direction flexural oscillation having a y-axis as a pitch axis, and roll-direction flexural oscillation piezoelectric elements that excite roll-direction flexural oscillation having an x-axis, which is perpendicular to the pitch axis, as a roll axis. Note that, like the applicants, Ohnishi et al. teach a longitudinal (pitch) and torsional (roll) oscillation.

The device body is constituted to enable application of the predetermined AC voltage so that the flexural oscillation in a pitch direction to be excited by the pitch direction flexural oscillation piezoelectric elements and the flexural oscillation in a roll direction to be excited by the roll direction flexural oscillation piezoelectric elements have a phase difference of 90°- therebetween. See col. 3, lines 30-35, at least.

The device body is a langevin oscillator.

The device body functions as a stator (30) of a traveling-wave ultrasonic motor that generates traveling flexural elastic waves in the piezoelectric elements by application of the AC voltage and transmits the mechanical oscillations in a

predetermined direction based on the traveling flexural elastic waves to the male distal end portion (71).

Ohnishi et al. do not note the specific use of their invention.

It would have been obvious to one having ordinary skill in the art to employ the invention of Ohnishi et al. with the screw driver of Mizobe at the time of his invention, *mutatis mutandis*, since their design makes for "high efficiency" operations. See col. 3, lines 30-35 of Ohnishi et al.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Direct inquiry to Examiner Dougherty at (571) 272-2022.

/T. M. D./

/Thomas M. Dougherty/

tmd

Primary Examiner, Art Unit 2834

October 29, 2008

Application/Control Number: 10/586,551  
Art Unit: 2834

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